

1. A method for transmitting information from a base station to  
mobile stations in a communication system, the method comprising the steps  
of:

(A) identifying at least one portion of a time frame within the forward  
link, the identified portion of the frame having available capacity for transmitting  
at least a portion of at least one previously unscheduled traffic stream in  
addition to any traffic streams previously scheduled to be transmitted over the  
forward link; and

(B) simultaneously transmitting the previously scheduled traffic  
streams and the portion of the previously unscheduled traffic stream during the  
identified portion of the frame.

2. A method for transmitting information from a base station to  
mobile stations in a communication system, the method comprising the steps  
of:

(A) identifying at least one portion of a time frame within the  
forward link, the identified portion of the frame having available capacity for  
transmitting at least a portion of at least one previously unscheduled traffic  
stream in addition to any traffic streams previously scheduled to be transmitted  
over the forward link; and

(B) simultaneously transmitting the previously scheduled traffic  
streams and the portion of the previously unscheduled traffic stream during the  
identified portion of the frame,

wherein a sum of the power allocated to the scheduled and unscheduled  
traffic streams is no greater than a maximum power ceiling.

3. The method of Claim 2, wherein the sum is substantially equal to  
the maximum power ceiling and the sum is maintained at a constant level over  
a plurality of time frames by repeating the steps of Claim 1.

4. The method of Claim 2, wherein at least a portion of one frame in  
the previously unscheduled set of traffic streams is intentionally transmitted at a  
first symbol energy that is insufficient for correct demodulation by an intended  
receiving station.

5. The method of Claim 4, further comprising the step of  
retransmitting on the forward link at least one portion of the information  
previously transmitted at the first symbol energy amount, wherein the  
retransmitted portion is retransmitted with a symbol energy that is insufficient by  
itself for correct demodulation by the intended receiving station.

6. The method of Claim 5, repeating retransmission of the  
retransmitted portion until the sum of the symbol energy received is great  
enough to permit correct demodulation of the retransmitted portion by the  
intended receiving station.

7. The method of Claim 6, wherein the previously scheduled traffic  
streams includes at least one constant bit rate traffic stream and at least one  
variable bit rate traffic stream.

8. The method of Claim 7, wherein frames in the constant bit rate  
traffic stream and frames in the previously unscheduled traffic streams are  
offset in time with respect to each other.

9. The method of Claim 8, wherein frames in the previously  
unscheduled traffic streams include messages that have different lengths.

10. The method of Claim 2, wherein a traffic stream from the  
previously unscheduled streams has a different frame length than a traffic  
stream from the previously scheduled streams.

11. The method of Claim 10, wherein the further traffic stream is  
transmitted discontinuously.

12. The method of Claim 11, wherein the previously unscheduled  
2 traffic stream has a lower priority than the previously scheduled traffic streams.

13. The method of Claim 2, wherein frames in at least one of the  
2 previously scheduled traffic streams and frames in the at least one of the  
previously unscheduled traffic stream are offset in time with respect to each  
4 other.

14. The method of Claim 13, wherein frames in at least one of the  
2 previously scheduled traffic streams and frames in the at least one of the  
previously unscheduled traffic stream have different lengths.

15. The method of Claim 2, wherein the communication system uses  
2 code division multiple access (CDMA) modulation.

16. In a radio communication system having a base station and a  
2 plurality of mobile stations, wherein a forward link that includes a plurality of  
traffic streams is sent on at least one channel from the base station to the  
4 mobile stations, and the forward link is subject to a maximum power ceiling, an  
apparatus for transmitting information from the base station to the mobile  
6 stations, comprising:

(A) a base station controller that determines an output power  
8 level associated with simultaneously transmitting a first set of one or more  
traffic streams from the base station to the mobile stations on the forward link,  
10 compares the output power level with the maximum power ceiling, and  
identifies at least one time frame in the forward link having available capacity  
12 for transmitting a portion of a second set of one or more traffic stream; and

(B) a base station transmitter that simultaneously transmits the  
14 first set of one or more traffic streams and the portion of the second set of one  
or more traffic stream during the at least one frame on the forward link.

17. In a radio communication system having a base station and a  
2 plurality of mobile stations, wherein a forward link that includes a plurality of  
traffic streams is sent on at least one channel from the base station to the  
4 mobile stations, and the forward link is subject to a maximum power ceiling, an

stations, comprising:

(B) means for comparing the output power level with the maximum power ceiling;

(D) means for simultaneously transmitting the first set of one or more traffic streams and the portion of the second set of one or more traffic stream during the at least one frame on the forward link.